

Department of Mathematics, CCAS  
**Math 1000: Dean's Seminar**  
**Language and Logic**  
Fall 2018  
TR 11:10am – 12:25pm  
Corcoran Hall, Room 207

**Course and Contact Information**

Instructor: Valentina Harizanov, Professor of Mathematics

Office: Phillips Hall (801 22nd Street), Room 703B

Tel: (202) 994-6595

E-mail: [harizanv@gwu.edu](mailto:harizanv@gwu.edu)

Web page: <http://home.gwu.edu/~harizanv/>

Office Hours: Tu 5:15–6:45pm; Th 12:35–1:50pm

At other times by appointment.

**Bulletin Course Description**

The course covers the fundamental principles of propositional logic and first-order predicate logic. It investigates the degree to which reasoning can be formalized, and how logic provides the foundations for digital computing and contemporary mathematics. The students will also analyze some real world problems and those arising in other academic disciplines, where logic adds meaning, formal method, and mathematical rigor to discourse.

**Course Prerequisite**

High school algebra; this is an introductory course.

**Learning Outcomes for Quantitative Reasoning**

As a result of completing this course students will be able to:

1. Represent mathematical information symbolically, visually, numerically, and verbally;
2. Articulate precise mathematical definitions and propositions and draw inferences from them;
3. Use analytic, algebraic, or geometric methods to solve problems;
4. Interpret and explain information represented in mathematical forms (e.g., formulas, tables, diagrams, graphs).

**Learning Outcomes for Oral Communication**

As a result of completing this course students will give two graded oral presentations that fulfill the following learning objectives:

1. Significant topic;
2. Clear thesis and persuasive argument;

3. Topical and disciplinary knowledge through self-crafted and audience-appropriate language;
4. Vocal and physical qualities that augment content and maintain audience interest.

## **Grading**

**Final Exam** (cumulative two-hour exam): worth 30% of the final grade

Tentative schedule: Tuesday, December 18, 2018: 10:20am – 12:20pm

**Midterm Exam**: worth 20% of the final grade

Tuesday, October 23, 2018, during class

**Take-Home Assignments and their in-class presentations**: worth 30% of the final grade (there will be 5 take-home assignments, each worth 6%)

**Oral Communication**: worth 20% of the final grade (there will be two oral presentations, each worth 10%)

For letter grades: 90% will be at least A-, 80% will be at least B-, 65% will be at least C-, and 50% will be at least D-.

## **Required Textbook**

*Sweet Reason* (A Field Guide to Modern Logic) by Jim Henle, Jay Garfield, and Tom Tymoczko, 2nd edition, Wiley Blackwell, 2011.

## **Supplementary Readings**

*Tarski's World: Revised and Expanded* by David Barker-Plummer, Jon Barwise, and John Etchemendy, Center for the Study of Language and Information, Stanford University.

*Mathematical Logic Applications and Theory* by Jean E. Rubin, Saunders Series.

## **Take-Home Assignment Policy**

Working in groups to discuss problems on the take-home assignments is not only permitted but is encouraged. However, the final submitted answers must be your own work, composed by you without copying from any source. You will also be asked to give in-class presentation of the solutions to selected problems in the assignments.

## **Attendance/Absence Policy**

Students are expected to attend all lectures, and are responsible for learning all material covered in lectures. If you must be away from class on a given day, please contact the instructor before the class and explain the need for your absence. In such a situation, your absence can be excused. Work missed owing to excused absence will not count against a student's grade. (Still, students are responsible for learning the material that is covered, even if they cannot be in class.)

## **Work Outside Class**

More than 2/3 of the time you devote to this class should take place outside the classroom. Even

the best students in the class should plan on spending an average of at least 5 hours a week on assignments and other studying. Some students may need to spend more time in order to master the material.

## **Blackboard**

Announcements and additional learning material or relevant information will be posted on blackboard: <https://blackboard.gwu.edu/>  
Use your Net Id and password to access blackboard.

## **Academic Integrity Code**

Academic dishonesty is defined as cheating of any kind, including misrepresenting one's own work, taking credit for the work of others without crediting them and without appropriate authorization, and the fabrication of information. For the remainder of the code, see: <https://studentconduct.gwu.edu/code-academic-integrity>

## **Support for Students Outside the Classroom**

*Academic Support Services:* <https://advising.columbian.gwu.edu/academic-support>

*Disability Student Services*

Any student who may need an accommodation based on the potential impact of a disability should contact the Disability Support Services office at 202–994–8250 in Rome Hall, Suite 102, to establish eligibility and to coordinate reasonable accommodations. For additional information please refer to: <https://disabilitysupport.gwu.edu/>

*Mental Health Services:* 202–994–5300

The University's Mental Health Services offers 24/7 assistance and referral to address students' personal, social, career, and study skills problems. Services for students include: crisis and emergency mental health consultations, confidential assessment, counseling services (individual and small group), and referrals. For additional information see: [counselingcenter.gwu.edu/](http://counselingcenter.gwu.edu/)

**University Policy on Religious Holidays:** <http://students.gwu.edu/accommodations-religious-holidays>

Students should notify faculty during the first week of the semester of their intention to be absent from class on their day(s) of religious observance.

Faculty should extend to these students the courtesy of absence without penalty on such occasions, including permission to make up examinations.

**Emergency Preparedness:** [www.gwu.edu/~gwalert](http://www.gwu.edu/~gwalert)

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